Flightfax

ARMY AVIATION
RISK-MANAGEMENT
INFORMATION

MARCH 1999 ◆ VOL 27 ◆ NO 3

http://safety.army.mil

We as commanders and other leaders are on the front lines in the aircraft accident prevention battle. But we are not without effective weapons and powerful support. One of the most potent weapons in our arsenal is . . .

ACCOUNTABILITY

"... even a seemingly small infraction can become a key factor in a set of circumstances that leads to an accident."

Accountability

Much too often, safety is defined as the absence of accidents. Such a definition can easily lead to an attitude similar to that of a lawbreaker who measures his success by the number of times he gets away with it. As leaders, we must recognize that even a seemingly small infraction can become a key factor in a set of circumstances that leads to an accident. Therefore, we must create a climate of accountability in our units by taking positive action to deal with every breakdown in professional discipline and standards.

Safe aviation operations require elimination of undisciplined actions before they cause an accident. But many times, in the name of "protecting" an aviator's career, we hesitate to hold aviators accountable for breaches of flight discipline, disregard of procedures, and failures to perform to standard. We sometimes treat such violations as isolated incidents that don't warrant disciplinary action. However, doing this can allow a climate of tolerance to develop, a command climate in which breaking the rules is overlooked.

This must stop. We must create a command climate of accountability in which violations of regulations and procedures are not tolerated. And we must do it before an accident happens.

There is no better predictor of future performance than past performance. The insurance industry knows this to be true. Their studies have shown, for example, that a person convicted of a first offense of drunk driving has gotten away with it many times before being caught. This is why insurance rates go up immediately upon the first conviction: the insurance companies know it wasn't the first time the driver drove drunk; it was simply the first time he or she was caught.

There's a lesson here for commanders. Few of us will ever deal with a true first-time violator; what most of us will see are repeat violators who are caught for the first time. And that's why we must take action at the first sign of a regulatory or procedural violation. If we do not, we as leaders set a new standard—a lower standard.

This is not to suggest that every infraction should result in the violator being removed from the cockpit; rather, every infraction should be dealt with appropriately. We have powerful tools—harsh and not so harsh—we can use to show that we will not tolerate even the slightest infraction. And we can do this without ruining the careers of aviators who deserve a second chance.

All it takes is consistent enforcement of standards. We have the tools—actions ranging from counseling to removal from flight status—to make the "punishment" fit the "crime." There is no excuse for a commander ever to overlook an infraction, even a minor one, because overlooking violations creates a tolerant command climate that will eventually result in an accident. Let me give you an example.

Several years ago, an Army aviator flew his helicopter into a lake while flying at 90 to 100 knots within 5 feet of the water. In the 12 months before the accident in which he died, this aviator had had four operational hazard reports (OHRs) filed against him in addition to at least two verbal reports about his flying.

Although the unit commander knew about the OHRs, written and verbal, and rumors about the aviator's "cowboy" style of flying and reputation as a "hot dog," the commander apparently looked at each report as a separate incident and never considered them as an indication of a pattern. As a result, this aviator got a "second chance" one time too many, and it cost him his life.

Many years ago, the Army Safety Center surveyed three aviation organizations that consistently maintained excellent safety records to determine the characteristics that led to their exceptional safety records. Each of them—a combat aviation battalion, an air cavalry squadron, and an aviation battalion—had a different organizational structure. And mission-wise, they had little in common except their success. But their commanders had one important characteristic in common: Each of them consistently took immediate and

effective action against deviations from established standards.

Undisciplined behavior rarely corrects itself. It's the commander's job to deal appropriately with violations as they occur. And, as commanders, we must take it one step further: We must document infractions so that habitual violators don't revert to "first-time" violators when a new commander comes in or the aviator moves on to a new unit.

Where soldiers' lives are at stake, we cannot afford to forgive and forget.

Leaders save soldiers.

—BG Charles M. Burke, Director of Army Safety and Commanding General, U.S. Army Safety Center, DSN 558-2029 (334-255-2029), burke@safety-emh1.army.mil

One of the tests of leadership is the ability to recognize a problem before it becomes an emergency.

—Arnold Glasow

Train as you'll fight: An ideal, not an imperative

"Train as you'll fight. Fight as you've trained. Train safely so you'll be there."

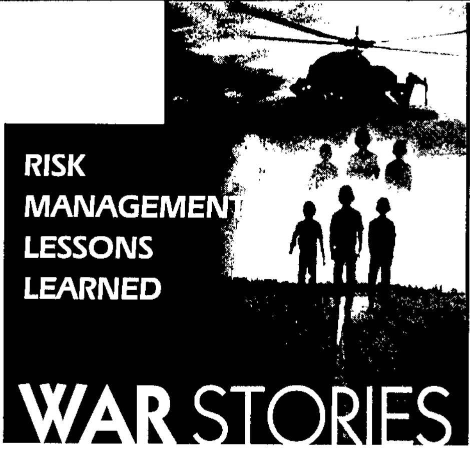
We are an Alabama Army National Guard, UH-60A equipped assault helicopter company preparing for a deployment to JRTC. The admonition quoted above appears at the end of every issue of our company safety office's unit safety bulletin. It is an important touchstone for our training. It is also important, however, that commanders, trainers, leaders, and soldiers clearly understand the differences between the risks we are permitted to take in training and the risks we would find acceptable in combat.

This issue becomes especially critical when we face training events such as those conducted at NTC and JRTC. I'm sure I'm not the only soldier who has ever heard the comment that "JRTC is different. The 'war rules' apply." The fact is that neither NTC nor JRTC are combat situations. They are training environments. The issue is addressed in chapter 5 (Risk Management) of TC 1-210: *The Aircrew Training Program: Commander's Guide to Individual and Crew Standardization*. Following are excerpts:

> One of the most fundamental concepts in both FM 25-100 and FM 25-101 is to "train as we will fight." However, to train as we will fight is not always possible for a number of reasons. Safety-related restrictions also must be considered. Many risks that are reasonable in combat are not supportable in training. The benefits of accepting some risks in training are not as great as the benefits of accepting the same risk in combat. Therefore, commanders do not accept all the risks in training that they would during combat.

So, whether it's a weekend drill, a trip to the firing range, or a deployment to NTC or JRTC, the question remains the same: "Can I do this safely?" It's the first question every soldier should ask before any mission. It is also the first question that must be asked by those entrusted with the training and safety of our soldiers.

—CW4 Frank B. Angarola, ASO, Company B, 1/131st Aviation, ALARNG, 1-131st.uh60safety@salem.aorcentaf.af.mil



The Devil's in the details

Since, technically, a war story should have something to do with war, here's the tale I use to introduce my aircrew coordination classes. Some quick background. It was late April 1970. One night an armored cavalry squadron got cut off and chewed up by the 17th North Vietnamese Army Division. The senior advisor called for an urgent medevac; what he got was me and my merry killers . . .

Sometimes somebody with only your best interests at heart will try to get you killed.

It ***really was*** a dark and stormy night. We—a crew of six—were flying a UH-1H Nighthawk gunship (minigun slaved to a xenon searchlight and a .50-cal on the right, twin 60's and a grenade launcher on the left) through a midnight monsoon at 500 feet. It was, after all, an ***urgent*** medevac.

Believe it or not, we had actually managed a flight brief before takeoff and a crew brief en route—a sort of Jurassic version of aircrew coordination, but with a crew of six (four of them heavily armed), I didn't want any solo players. My Firefly flare ship took up a five-rotor-disk staggered-right after confirming that he could see my steady-dims with no problem (no, child, NVGs hadn't been invented yet).

I won't bore you with the details of torrential rain, lightning, turbulence, and popping in and out of clouds we never did see or the cheery, "Radar contact lost; last observed heading was *skrrrk*. See you *skrrrk* you get *skrrk...*", or the water leaking from the overhead panel or the intermittent radio contact with our folks on the ground (it made FM homing a real chore until we finally made visual contact—we could tell where they were laagered by all the green and white tracers converging with all the mortar explosions).

I will, however, bore you with two very important details. My Peter-Pilot's only previous night flight had been at an Alabama stagefield, and his only previous flight in the Land Of The Two-Way Gunnery Range had been ***yesterday's*** in-country checkout flight. But earlier in the evening, I had observed that he could fly instruments like a 'Thirties mail pilot. Oh, frabjous day! The boss had finally paired me up with a copilot who wouldn't try to kill us in the clouds.

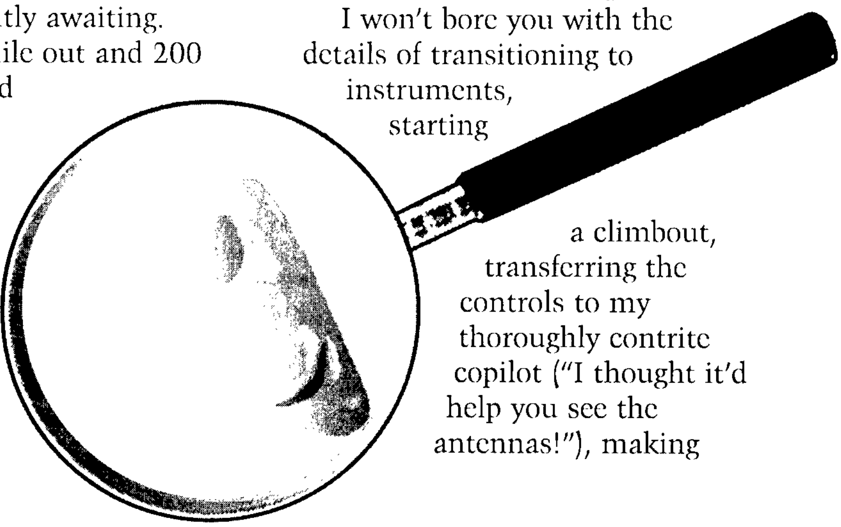
And now for the part you've been so patiently awaiting.

At a half-mile out and 200 feet above mud level, the opposition stopped firing into the laager and began putting random bursts into the sky. Heh, heh—not even close! One hundred meters out and 75 feet up, I could see armored personnel carriers skulking in the murk. Thirty meters out and 30 feet above the mud, I was nice and slow, picking my way through the antennas, raindrops and rice straw beginning to swirl in the rotor wash—the Zippo lighter in the steel pot began to flicker, marking my touchdown spot.

Question. If you were shooting a night approach into an Alabama stagefield, what is the very first thing you would expect an Army aviator to do? Conversely, if you were shooting a night approach into the middle of a firefight, what is the very last thing you'd expect said Army aviator to do? If you answered, "Turn on the landing light," to both questions, you're absolutely correct. Care to guess what my instrument ace did? Unannounced?

The troops in the laager nipped back inside their APCs, the raindrops and rice straw turned into a million points of light swirling in a million different directions; the bad guys reoriented their fire with commendable speed, and lovely green basketballs now joined the tumbling mirth of rain and straw 2 feet from my face. My previously dark-adapted eyeballs uncaged, and I got a screaming dose of vertigo.

I won't bore you with the details of transitioning to instruments, starting a climbout, transferring the controls to my thoroughly contrite copilot ("I thought it'd help you see the antennas!"), making



calls to Firefly, and trying to figure out why the direction "up" had suddenly acquired the gift of bilocation. At least I didn't have to turn the landing light off; one of the other team's superstars shot it out for me—along with my chin bubble. I won't bore you with the details of what happened when I disgustedly hollered, "Aw, SHOOT!" and the fearsome foursome in the back opened up with full left and right suppression. And I certainly won't bore you will all the details of our ***second*** voyage into the laager to pick up the wounded that Firefly couldn't extract. (Everybody we hauled out lived, which is the best part of the story!)

Would a really, ***really*** thorough crew brief have reduced the thrill factor? That's kinda hard to say. I'd been Nighthawking for months, and it would never have occurred to me that a pilot would ***touch*** the landing-light switch, never mind turn the blasted thing ON in a hot LZ. So just where does aircrew coordination come into play here?

Well, for starters, how about "situational awareness for two"—the newbie not being fully aware of just what "combat zone" really meant, and the old guy not being fully aware of just ***how*** unaware a newbie could be. And, oh yeah, the "halo effect": "Kid's great on the instruments—this should be a no-sweat mission." And let's not overlook "sudden loss of judgment." Did I make his comfort zone a wee bit ***too*** comfortable with my piece-of-cake briefing?

Details, details, details. The Devil's in the details.

—CW4 Bill Tuttle, Army Aviation Support Facility #1, NJARNG, West Trenton, NJ, DSN 445-9261 (609-530-4251)

Shortfax
Keeping you up to date

Static grounding points

Technical advisory message #99 (261510 Jan 99) from the U.S. Army Petroleum Center published new guidance on static grounding points. Following is a summary of the message.

Summary

FM 10-68: *Aircraft Refueling* was rescinded and replaced by FM 10-67-1: *Concepts and Equipment of Petroleum Operations* effective 2 April 1998. Since then, significant discussion has surfaced Armywide in reference to testing frequencies of grounding points used for aviation and general petroleum refueling operations.

In September 1990, TRADOC granted a waiver to the old FM 10-68 requirement for annual testing of grounding points. In September 1994, FORSCOM granted a similar waiver. These waivers precluded any continuing testing to verify performance of grounding points.

Due to the revised ground-testing frequencies contained in the current FM 10-67-1, the TRADOC and FORSCOM waivers are no longer valid. These frequencies have been coordinated throughout the Army petroleum community and with respective safety points of contact within TRADOC and FORSCOM. All sources agreed with the guidance set forth in FM 10-67-1 and recommend that all Army petroleum units comply with the procedures.

It should be noted that the ground-testing procedures referenced in FM 10-67-1 are applicable to grounding points used for refueling operations on aircraft ramps and flight lines and in fuel tanker parking areas. Ground testing requirements for other operations have more stringent requirements. Following is a summary:

- **Aircraft apron (refuel) and tanker parking area grounding points.** Guidance published in FM 10-67-1 requires testing of grounding points after initial installation and every 5 years thereafter, after repair of damaged grounding points, or when obvious damage is discovered.
- **Aircraft hangars.** TM 1-500-204-23-1 states that grounding systems in aircraft hangars must be inspected and tested annually or whenever there is a possibility of mechanical damage.
- **Ammunition & explosives.** AR 385-64 refers to ground-testing requirements for aircraft during ammunition operations. It states that ground rods must be visually inspected every 6 months and electrically tested every 24 months.

—POC: Mr. Del Leese, Army Petroleum Center, DSN 977-8580 (717-770-8580), dleese@usapc-emh1.army.mil

System safety: How it happens

Most soldiers, especially aviation soldiers, are familiar with the Army Safety Center's accident-investigation mission. However, analysis and dissemination of accident information to field units is only one of the many ways the Director of Army Safety (DASAF), who is also the commander of the Army Safety Center, fulfills his responsibility under AR 385-10 to "administer and direct an effective Army Safety Program (ASP) to reduce the occurrence of accidents." This article focuses on defining system safety and outlining the key players' responsibilities.

System safety is a proactive program that applies safety processes to Army systems throughout their life cycles, from inception to disposal. The key players in system safety are combat developers, materiel developers, and soldiers—the ultimate users of the equipment.

Background

Department of Defense Instruction (DODI) 5000.2R requires system-safety programs for all major acquisition systems. In the Army, AR 70-1 delineates risk-management responsibilities throughout the acquisition force, while AR 385-16 delineates responsibilities for system safety and engineering management. The commander of the Army Safety Center and Director of Army Safety has overall responsibility for managing the Army System Safety Program and developing system-safety policy.

Policy

Army policy dictates that system safety be applied and tailored to all Army systems and facilities throughout their life cycles. This policy is institutionalized through partnerships and coordination with Assistant Secretary of the Army for Research, Development, and Acquisition; Assistant Secretary of the Army for Installation, Logistics, and Environment; and other Army staff offices. Implementation rests with the program managers responsible for Army systems development in all stages of life-cycle management (figure 1).

	Milestone 0		*Milestone I*		*Milestone II*		*Milestone III*	
Determination of mission		Concept exploration		Program definition and risk reduction		Engineering and manufacturing development		Production, fielding/ deployment and operational support

Figure 1. Life-cycle management model

Objectives

The objectives of system safety are to—

- Maximize operational readiness and mission effectiveness by ensuring that appropriate hazard-control measures are designed into systems in a timely manner.
- Ensure that hazards associated with new technology or operations are identified for consideration in later applications.
- Ensure that hazards are eliminated or controlled through design and that risk associated with residual hazards is formally identified, accepted at the appropriate management decision level, and documented.
- Identify hazards and manage the risk associated with these hazards for each system or facility throughout its life cycle in all possible configurations and all mission variations.

The combat developer

The combat developer is the user's representative. System safety is introduced early into the development process by combat developers in the concept-definition stage. Safety is infused into systems based on user experience with previous systems and analysis of future operational capabilities. To design safety into a system, the combat developer—

- Identifies safety requirements in the operational requirements document, which defines system performance.
- Monitors program development and makes recommendations on all hazards identified by the program manager.
- Has formal concurrence/nonconcurrence for risk-management decisions at program and milestone decision reviews.

The combat developer is involved in the identification, assessment, and recommendation process informally as well as through formal day-to-day monitoring of system progress as a member of the System Safety Integrated Product Team (SSIPT). Additionally, as system safety risk assessments are coordinated, the combat developer formally concurs or nonconcurs with risk-mitigation methods proposed by the program manager or decision authority.

THE MATERIEL DEVELOPER

The materiel developer is the point man for system safety. Materiel developers assess, refine, and track safety issues through production to fielding. The materiel developer identifies hazards throughout the entire life cycle; however, early identification of hazards and designing safety into the system provides the most long-term benefit.

THE PROGRAM MANAGER

The program manager (PM) charters an SSIPT of technical experts to assist in managing the safety program. One of the SSIPT's first tasks is to develop a system safety management plan, which establishes management policies, objectives, and responsibilities for execution of the system-safety program for the life cycle of the system. The plan outlines government-contractor responsibilities, ensures that hazards are identified and risk assessments and decisions are documented, outlines tasks of SSIPT participants, and lists milestones for safety actions with respect to system development.

After fielding, the PM is responsible for tracking worldwide accident and incident data, improvement recommendations, deficiency reports, and other data to correct safety hazards as they arise. Through system safety risk assessment (SSRA), the severity and probability of hazards are determined and presented to the appropriate level decision maker for risk management (figure 2). The decision-maker implements controls within the following resource constraints:

- Design for minimum risk.
- Incorporate safety devices.
- Provide warning devices.
- Develop procedures and training.

THE USER

Users participate in operational testing of systems as part of the materiel-development process and have an opportunity to evaluate and identify system-safety deficiencies. Once a system is fielded, efforts focus on discovering safety deficiencies that were not identified during the development process. As users, soldiers have direct input to system safety by identifying safety deficiencies through actual system use. They also provide insight into unforeseen hazards and new mission requirements. Soldiers may submit equipment improvement reports, quality deficiency reports, and DA Forms 2028 or coordinate with logistics assistance representatives (LARs) to document and fix specific safety hazards.

SUMMARY

System safety provides the optimum level of safety attainable through engineering efforts balanced against operational capabilities. Risks are considered throughout the development and fielding process and eliminated where possible; those that cannot be eliminated are reduced to the lowest level possible. Few soldiers probably realize the magnitude of safety efforts to provide safe and reliable equipment for Army operations. Regulations, policies, and key organizations are in place to field and sustain you, the soldier, with the best possible equipment available.

—MAJ Don Presgraves, Aviation Systems & Accident Investigation Division, DSN 558-9858 (334-255-9858), presgrad@safety-emh1.army.mil

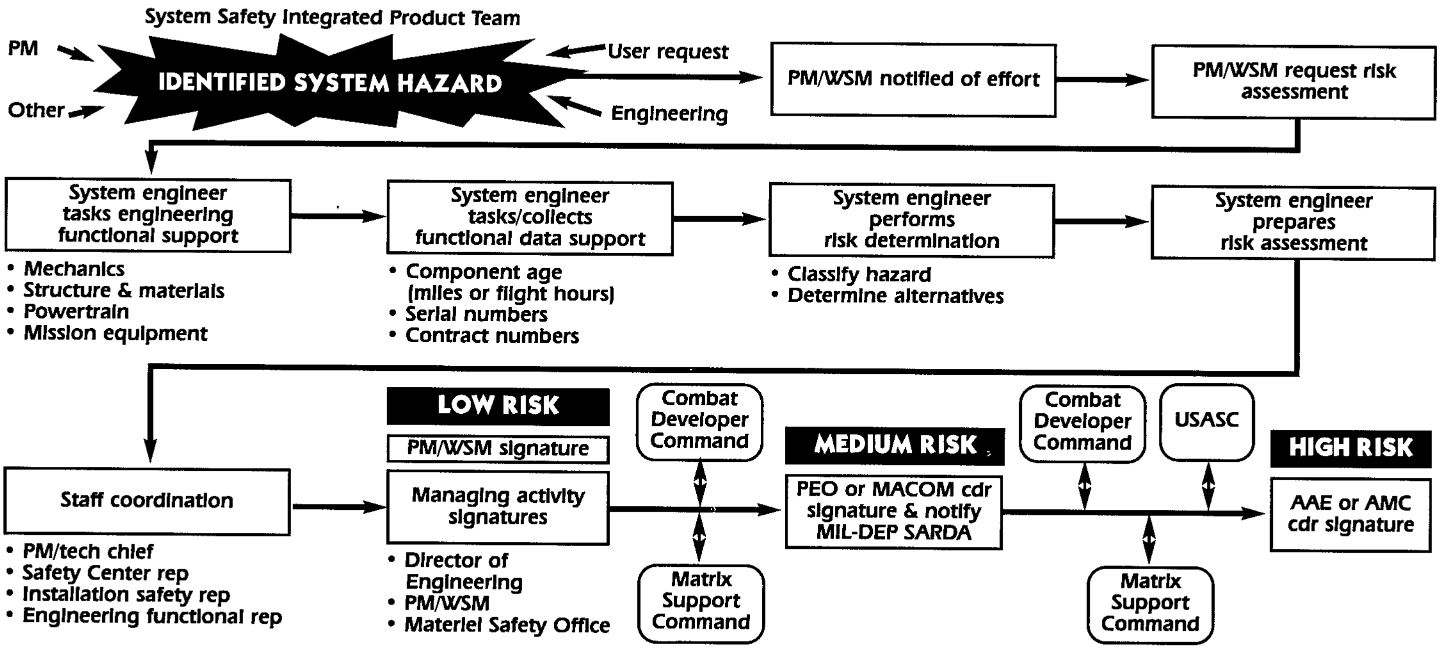


Figure 2. SSRA process (risk assessment flow)

Human error brought on by design deficiency

2200 hours, 1 September 1996. PZ Bastogne, Fort Campbell, KY.

It was a very dark night; there was no illumination. The 1st Brigade of the 101st Airborne Infantry Division (Air Assault) was, as usual, training for war. The scenario involved moving the entire brigade deep into enemy territory with helicopters.

The mission was planned out in detail. The coordination meetings, briefings, and rehearsals were done. The mission was going to be complicated and difficult, involving flights of AH-64s, UH-60s, and CH-47s moving soldiers and equipment into a combat zone. The flights were required to take off, cross conflicting routes, land, discharge cargo and personnel, and take off again for the next load on a timetable. The division standard was to be on time ±30 seconds and on target ±50 meters.

I was flight lead of the first four CH-47s; PZ control wanted all four loads on the LZ at the same time. The flight of Black Hawks ahead of me had taken off a little late, and Chalk 4 of my flight was having a problem hooking up his load. PZ takeoff time came and passed; we finally took off 9 minutes behind schedule. We adjusted our airspeed, and time was made up along the route. RP crossing time was about 20-seconds fast.

As we approached the LZ, I could see the intended point of touchdown. The crew prepared for landing as I slowed from about 70 KIAS, turned to the briefed heading (330 degrees), and started to come down from about 75 feet above the treetops. We were going to make our time, no problem.

The copilot completed the before-landing checks.

The flight engineer prepared to call the load clear of the final barriers.

Our airspeed was down to about 30 KIAS, and we were about 70 feet above the ground; our heading was still 330 degrees.

As I mentioned before, it was a very dark night. Chalk 3 had his IR band-pass filter light on, and this light cast the shadow of my aircraft and load—a HMMWV—onto the ground about 200 feet out in front of me.

I was commenting on how large the LZ was and that we would have no problem fitting four hooks when I saw my load falling. Then I saw the glaring red of two master caution and three hook-open lights.

What happened

In a moment I went from bewilderment to rage to realizing that now was not the time to vent.

"What just happened?" I asked over the intercom.

The flight engineer immediately took responsibility for the release. He said, "Sir, I hit the release button when I went to push to talk."

Why it happened

A design deficiency in the arrangement of switches on the winch/hoist-control grip was a significant contributing factor. The cargo-hook-release switch is located about ¾-inch and 30 degrees to the upper left of the microphone switch.

My story is not the first to point out a problem with the hoist/winch-control grip. There have been numerous incidents over the years; in fact, from 1991 through 1997, an average of 2.6 inadvertent releases per year were attributed to the design deficiency. Following are excerpts from some of the reports on file:

- On final during external-load training, flight engineer was using winch/hoist-control grip when he experienced communications failure. During the confusion, he accidentally pressed cargo-hook-release switch, jettisoning load.
- While hovering, flight engineer erroneously jettisoned load (bridge ramp section).
- During hover, external load (M102 howitzer) was unintentionally jettisoned.
- When crew chief attempted to transmit status of cargo over intercom, he inadvertently pressed cargo-hook-release switch, dropping load (truck and miscellaneous equipment).
- During approach, flight engineer unintentionally released load (backhoe).
- On final approach, crew chief inadvertently released load while attempting to communicate with flight engineer. He depressed load-release switch instead of push-to-talk switch on hoist-operator's grip assembly.
- M1038 HMMWV was inadvertently jettisoned during final approach.

■ External load (M998) was inadvertently jettisoned during hover.

■ As crew chef repositioned himself in cargo hole to observe load during NVG approach, his finger inadvertently depressed jettison button on pistol grip, releasing load (2 M102 howitzers) from approximately 5 feet agl.

■ Flight engineer inadvertently released external load during final approach.

■ Crew chief inadvertently pressed cargo-hook-release button during final approach, resulting in unintentional jettisoning of M998 truck.

WHAT *COULD* BE DONE ABOUT IT

■ Remove one of the two switches from the winch/hoist-control grip.

■ Place a spring-loaded protective cover over the cargo-hook-release switch (similar to the one covering the cable-cutter switch located immediately to the right of the cargo-hook-release switch).

■ Provide written procedures and/or guidance. Submit a change to the operator's manual to include a warning. Submit a change to the ATM to prohibit the use of the winch/hoist-control operators grip for communicating during external-load operations.

■ Dictate specific procedure in unit SOP.

WHAT *SHOULD* BE DONE ABOUT IT

Any of the above would help. A combination of written procedures, properly posted warnings, and a protective cover would be not only operationally but also economically effective.

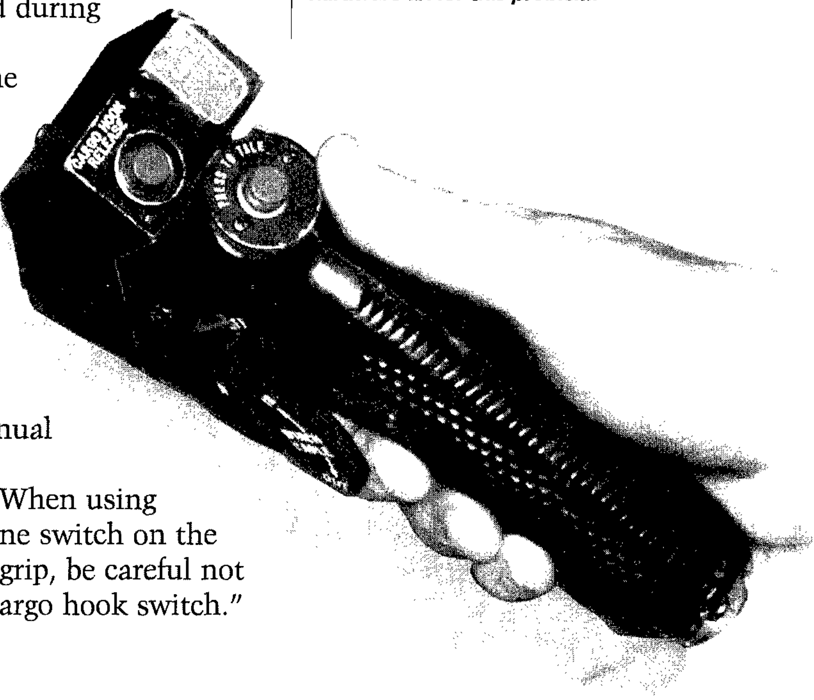
WHAT *WAS* DONE ABOUT IT

■ A protective ring was installed to prevent accidental release of external cargo. The intent was for the ring to extend beyond the button enough that it would alert the operator as to which button he was attempting to operate. Unfortunately, that is not what resulted. I have checked 10 CH-47s, and in all of them the button protrudes beyond the protective ring by about 1/16-inch. If the operator is working by feel, he can push the wrong button and not know until it is too late.

■ Some units have addressed this problem in their SOP by prohibiting the use of the winch/hoist-control grip for communicating.

■ The following warning was posted to the CH-47D Nonrated Crew Member (NCM) Familiarization Instructor Booklet (ETP 2C-011-0002-AL), June 1995: "Warning: The PTT switch on the hoist-control grip is similar to the cargo-hook-release button on the same grip. If the PTT switch is used during external-load operations, the NCM could inadvertently release the load."

■ The following caution was posted to the CH-47D operators manual (page 4-23): "CAUTION: When using the microphone switch on the hoist control grip, be careful not to press the cargo hook switch."



SUMMARY

Costs related to this problem go far beyond the dollar costs, although the dollars lost are significant. In only 3 years (1996-98), 24 inadvertent-cargo-release mishaps cost more than $1.3 million (see December 1998 *Flightfax*). They also resulted in seven injuries—not to mention the incalculable costs of degraded crewmember morale and professional standing within the unit.

The recommendations made here are based on the limited experience of one person—namely, me. However, it is clear to this Chinook driver that the issue of inadvertent cargo release needs more attention.

—CW2 John P. Garske, B Company 1-223rd Aviation Regiment (Provisional), Fort Rucker, AL, DSN 558-6218 (334-255-6218), garske@snowhill.com

Editor's Note: This hazard was identified through accident investigations and was also raised as a concern at last year's CH-47 User's Conference. The Army Safety Center is working on the problem with combat developers, PEO-AVN CH-47, and Boeing Corporation. Currently, Boeing is evaluating the work station in order to provide a hardware fix for this problem.

Accident briefs

Information based on *preliminary* reports of aircraft accidents

AH1

Class E

F series

■ During student training, crew executed shallow approach to running landing. At termination of normal approach angle, forward crosstube broke above left and right skid cuff.

■ Shallow approach to running landing was executed without any unusual flight or touchdown peculiarities. Aircraft slid about 1½ aircraft lengths and came to a stop. As ground movement terminated, crew heard a loud pop. Inspection revealed front cross tube was broken above right-side skid cuff.

■ During engine startup, generator and master caution lights came on. Generator would not reset. Aircraft was shut down without incident. Caused by sheared starter generator drive shaft. Generator was replaced, and aircraft was released for flight.

AH64

Class A

A series

■ Crew was preparing to execute single-engine operations from a 400-foot hover when aircraft reportedly entered uncommanded right turn. Aircraft entered trees and landed hard. Aircraft was destroyed in postcrash fire, but crew escaped without injury. Accident is under investigation.

Class C

A series

■ Suspected transmission overtorque (135 percent for 1 second) occurred during single-engine operations.

■ Crew noted vibration and illumination of APU fire light while on short final to approach. Fire handles were pulled, and APU fire light went out. Crew landed and exited to inspect. Fire was seen in the "turtle-back" area, and fire-extinguishing units were activated.

Class E

A series

■ During runup, crew was performing engine HIT check on No. 1 engine. When engine anti-ice system was tested, tgt rose only 5° to 20° (30° is minimum). A second check produced the same results. Caused by faulty engine anti-ice valve, which was replaced.

■ During takeoff to hover, utility psi caution light came on and utility hydraulic pressure went to zero. Aircraft landed without incident. Inspection revealed that hose clamp had worn through hydraulic hose.

■ During OGE hover, ECS light come on intermittently and TADS image began to degrade. Crew engaged standby fan, and, during return to airfield, odor of burning plastic was detected. Caused by failure of TADS ECS fan.

■ Automatic stabilator audio and caution light activated intermittently after takeoff. Warnings continued to appear even after pilot took manual control of stabilator. Crew elected to terminate mission and return to airfield. Maintenance could not duplicate problem. Suspect malfunction was caused by combination of moisture and cold weather.

CH47

Class C

D series

■ Transmission oil hot light came on during MOC, accompanied by tripping of left engine transmission overtemp latch and left-engine transmission oil temperature reading of 140°C. Aircraft was shut down. Inspection revealed that fan blower drive shaft was sheared.

Class D

D series

■ While attempting to hook up HMMWV, hook-up man struck VOR antenna in front center cargo hook with reach pendant, breaking antenna off aircraft.

E series

■ Aircraft was taxiing backwards on aft wheels when aft right landing gear drag beam failed and landing gear collapsed. Aircraft was brought to hover and repositioned with aft right landing gear section over pallet. Aircraft was shut down without further damage.

Class E

D series

■ Left aft pylon work station platform opened during cruise flight. Postflight inspection revealed that honeycomb material around forward latch on work platform had failed. Work platform was replaced.

■ During cruise flight, copilot noticed small crack develop in left front windscreen. Within 1 minute, crack continued across windscreen, stopping at window's edge. PC landed and shut down aircraft without further incident. Windscreen was replaced.

■ No. 2 engine fire light illuminated during runup with no indication of fire. Aircraft was shut down. Maintenance replaced sensing element.

OH58

Class C

D(I) series

■ MOC was being conducted for replacement of engine oil bypass switch. High engine oil temperature caution light came on while Nr and Np were at 100 percent. Np gauge continued to climb to 130°C for 4 seconds during shutdown. Suspect improper rebuild of bypass switch, resulting in obstruction of oil flow to engine.

Class D

C series

■ Tail stinger contacted ground during demonstration of standard autorotation. Aircraft landed hard.

Class E

C series

■ During descent from OGE hover, aircraft was nearing ground for termination at 3-foot hover when aircraft felt as if tail stinger had contacted ground. Descent was terminated and aircraft repositioned at a 5-foot hover. During clearing turn, crew spotted a survey stake marker and landed. Postflight inspection revealed damage to lower cabin.

D(I) series

■ When aircraft picked up to 2-foot hover, tgt rose rapidly to 817° for 5 seconds. Upon landing, all instruments went back to normal. When crew again picked up to 2-foot hover, tgt rose rapidly to 819° for 4 seconds. Crew landed and shut down. Maintenance flushed engine and found remnants of shop towels in compressor bleed port. No limits were exceeded, and aircraft was checked and found okay.

TH67

Class B

A series

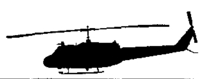
■ Crew reported abrupt upward pitch of the nose during forward hover, after which aircraft rolled, coming to rest on its right side. IP was injured, and aircraft sustained major structural damage.

Class D

A series

■ During standard autorotation, student held aircraft off ground too long, then touched down 5 degrees right of runway heading in a nose-low attitude, setting off a fore and aft motion. As aircraft rocked back level, IP heard spike knock and shut down. Striker plate on roof was knocked loose by transmission spike, and Thomas coupling on main drive shaft shaved top of elastometric dampener cover.

UH1



Class D

H series

■ IP initiated standard engine failure at 3-foot hover. Student applied too much cushion and climbed to approximately 5 feet. He then rapidly lowered collective to bottom stop. Aircraft bounced hard before coming to a stop.

UH60

Class A

A series

■ Aircraft crashed on landing. PC and PI were killed, and crew chief and two passengers were injured. Accident is under investigation.

Class C

A series

■ Engine temperature rose to 850°C during startup and reached 990°C during engine abort. Cause not reported.

K series

■ During NVG snow landing to dry lakebed, stabilator contacted obstacle obscured by snowdrift. Postflight inspection confirmed stabilator (sheet metal) damage.

Class D

A series

■ Aircraft was engulfed in dust cloud during landing. Crew attempted go-around, but had insufficient power due to aircraft weight. Pilot on controls lost all visual reference and became disoriented. Copilot noticed aircraft drift aft and took controls as stabilator contacted ground. Damaged stabilator was replaced.

Class E

A series

■ Crack in ski was found on postflight. Suspect that ski contacted uneven terrain or snow-covered object during blowing-snow landing to unimproved LZ. Suspect ski flexed upward, contacting step, resulting in crack.

■ When visibility dropped during slingload mission, PC turned left to avoid weather and lost sight of road. PI noted low rotor rpm but still had contact with road and took controls and turned back to the right. Load started oscillating severely and decision was made to jettison load. When crew chief manually jettisoned load, rotor rpm returned to normal and aircraft climbed through clouds and broke out VFR on top. Load was recovered the following day; blivet had burst on impact.

L series

■ Aircraft landed hard on uneven terrain during brownout, and landing light hit ground. Light required replacement.

■ During multiship air assault, aircraft landed in high grass and rolled into rut. Searchlight contacted ground, breaking fore and aft gear. Maintenance replaced searchlight.

■ Crew repositioned aircraft 2 kilometers from parking area to perform HIT check, during which No. 1 hydraulic pump failed and No. 1 hydraulic light illuminated. Aircraft was cleared for one-time flight back to parking area, where it landed without incident. Inspection revealed that hydraulic pump had failed internally.

C12

Class B

R series

■ During maximum-power takeoff, aircraft ran off runway and struck several runway lights. Aircraft decelerated and, upon returning to runway, struck concrete slab before being stopped. Right main landing gear, right engine, all four propeller blades, and right side of fuselage were damaged.

Class C

F series

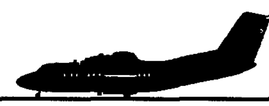
■ Multiple bird strikes occurred during night training flight. Aircrew was completing their third practice landing at home airfield when a flock of geese flew into path of aircraft during rollout phase of simulated single-engine landing. Damage included scuffed prop on No. 1 engine, bent prop on No. 2 engine, left-side pitot tube torn from mount, and two flat main gear tires.

Class E

H series

■ Cockpit filled with smoke and fumes during climb through flight level 140. Aircraft immediately returned to base without further incident. Caused by failure of blower cooling fan in inertial navigation unit. Blower was replaced.

O5



Class E

DHC-7

■ With full brakes applied as power was increased for takeoff, aircraft began moving forward. Nos. 1 and 2 hydraulic pump warning lights came on, and emergency brakes were applied to stop aircraft. Caused by rupture of hydraulic flex line on outboard spoiler actuator and loss of fluid. Flex line was replaced.

For more information on selected accident briefs, call DSN 558-2785 (334-255-2785). Note: Information published in this section is based on *preliminary* mishap reports submitted by units and is subject to change.

Aviation messages

Recap of selected aviation safety messages

Safety-of-flight message

UH-1-99-SOF-1, 071844Z Jan 99, technical

SOF message UH-1-98-06 directed the installation of a limited number of new coated spur gears on T53 engines installed on UH-1 aircraft that passed the vibration inspection directed by SOF message UH-1-98-05. In addition, SOF UH-1-98-08 was issued to extend the recurring vibration inspection interval to either 50 or 150 hours depending on whether the coated spur gear was installed.

The purpose of this message is to establish a calendar date suspense for completion of field installation of the coated spur gears, provide requisitioning and credit instructions for the coated spur gear, and authorize re-use of certain parts from engines that fail the vibration inspection required by UH-1-98-SOF-08.

AMCOM contact: Mr. Robert Brock, DSN 788-8632 (256-842-8632), brock-rd@redstone.army.mil

Safety-of-use message

SOU TACOM 98-01 to aviation units, 161937Z Dec 97, operational (retransmission)

There have been several reported failures of D-1 refueling nozzles (NSNs 4930-01-440-1085, 4930-01-297-3777, 4930-01-369-6230, and 4930-01-369-9821). Although not Armywide, the situation seems to be occurring in hot-climate locations. Apparently, solar heating causes thermal expansion of fuel trapped inside the nozzles and increases internal pressure beyond the allowable limit. This over-pressure situation causes the shutoff linkage assembly to fail, resulting in a fuel spill.

This message outlines a method of relieving internal pressure from the nozzle assembly until testing and analysis have been completed.

Unit commanders, contact your local TACOM Logistics Assistance Representative (LAR) or your state Surface Maintenance Manager for assistance. If you do not know who your LAR is, call DSN 367-6204/6293 for CONUS; DSN 375-6063/6064 for Germany; and DSN 315-722-3036/3881 for Korea.

TACOM contact: LTC Genaro J. Dellarocco, DSN 786-4200 (810-574-4200), dellarog@cc.tacom.army.mil

Maintenance-information messages

AH-64-99-MIM-03, 021923Z Dec 98

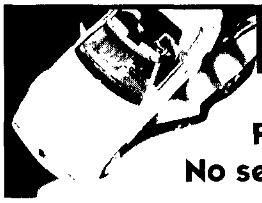
There have been several documented occurrences of AH-64A generator failure, with some reports of smoke entering the cockpit. The primary failure mode of the generator has been drive-end-bearing failures that often result in extensive damage to the generator. The purpose of this MIM is to modify phase-inspection requirements of the generator to aid in detecting impending bearing failures.

AMCOM contact: Mr. Matt Benzek, DSN 897-4915 (256-313-4915), benzekm@avrdecr.redstone.army.mil

AH-64-99-MIM-04, 161706Z Dec 98

Cracking has appeared in fuselage station 530 and 547 frames, which support the vertical stabilizer. The purpose of this message is to clarify and provide additional details for the 50-hour special inspection of these areas.

AMCOM contact: Mr. Lee Bumbicka, DSN 897-4925 (205-313-4925, bumbickal@avrdecr.redstone.army.mil



POV fatality update through January

Speed
Fatigue
No seatbelt

No new causes, just new victims

FY98	FY99
40	45

IN THIS ISSUE

WS - War Stories, CC - Crew Commo, SF - Shortfax

Class A Accidents through January

		Class A Flight Accidents		Army Military Fatalities	
		98	99	98	99
1ST QTR	October	2	1	0	0
	November	1	1	0	2
	December	2	1	2	0
2D QTR	January	1	1	0	0
	February	1		0	
	March	1		0	
3D QTR	April	0		0	
	May	1		0	
	June	2		4	
4TH QTR	July	1		0	
	August	0		0	
	September	0		0	
	TOTAL	12	4	6	2

U.S. ARMY SAFETY CENTER

Flightfax is published by the U.S. Army Safety Center, Fort Rucker, AL 36362-5363. Information is for accident-prevention purposes only and is specifically prohibited for use for punitive purposes or matters of liability, litigation, or competition. Address questions about content to DSN 558-2676 (334-255-2676). Address questions about distribution to DSN 558-2062 (334-255-2062). To submit information for publication, use fax 334-255-9528 (Ms. Sally Yohn) or e-mail flightfax@safety-emh1.army.mil Visit our website at http://safety.army.mil

Charles M. Burke
Brigadier General, USA
Commanding